

CLAIMS

I claim:

1. A method, comprising:

positioning a die with a perimeter and a center adjacent to a connection material that is adjacent to a substrate; and

applying heat to the die, wherein more heat is applied to the perimeter of the die than to the center of the die.

2. The method of claim 1, wherein more heat is applied to the perimeter of the die than to the center to raise the center of the die to a temperature in a range from about 200 degrees Celsius to about 340 degrees Celsius and to raise the perimeter of the die to a temperature in a range from about 200 degrees Celsius to about 340 degrees Celsius.
3. The method of claim 1, wherein more heat is applied to the perimeter of the die than to the center to make a temperature at the center of the die substantially equal to a temperature at the perimeter of the die.
4. The method of claim 1, wherein the connection material comprises epoxy.
5. The method of claim 1, wherein a heat nozzle applies the heat.
6. The method of claim 5, wherein the heat nozzle comprises a peripheral section that comprises a first material with a first thermal conductivity, and a middle section that comprises a second material with a second thermal conductivity lower than the first thermal conductivity.
7. The method of claim 5, wherein the heat nozzle comprises a peripheral section that contacts the die and a middle section that does not contact the die.

8. The method of claim 7, wherein the middle section comprises a substantially spherical cavity.

9. The method of claim 1, wherein a heating block generates the heat.

10. The method of claim 9, wherein the heating block comprises a peripheral section and a middle section, and the peripheral section of the heating block generates more heat than the middle section of the heating block.

11. The method of claim 10, wherein current traveling through heating elements within the heating block generates the heat, and the peripheral section of the heating block comprises more heating elements per unit volume than the middle section of the heating block.

12. A method, comprising:

positioning a heat nozzle adjacent a surface of a die;

heating the heat nozzle;

transferring heat from the heat nozzle to the die, wherein more heat per unit area is transferred to an edge portion of the die than to a middle portion of the die.

13. The method of claim 12, wherein heating the heat nozzle comprises transferring more heat per unit area from a heating block to an edge portion of the heat nozzle than to a middle portion of the heat nozzle.

14. The method of claim 12, wherein heating the heat nozzle comprises transferring substantially the same amount of heat per unit area from a heating block to an edge portion of the heat nozzle as to a middle portion of the heat nozzle.

15. The method of claim 14, wherein the heat nozzle comprises a peripheral section that comprises a first material with a first thermal conductivity, and a middle section that comprises a second material with a second thermal conductivity lower than the first thermal conductivity.

16. The method of claim 14, wherein the heat nozzle comprises a peripheral section that contacts the die and a middle section that does not contact the die.

17. A device, comprising:

a heater having a heating block portion and a heat nozzle portion;

a positioner, to position a die adjacent to the heater; and

wherein the heater is adapted to apply to a substantially planar surface more heat at a peripheral portion of the heat nozzle than at a middle portion of the heat nozzle.

18. The device of claim 17, wherein the heat nozzle portion comprises a peripheral section that comprises a first material with a first thermal conductivity, and a middle section that comprises a second material with a second thermal conductivity lower than the first thermal conductivity.

19. The device of claim 17, wherein the heat nozzle portion comprises a peripheral section to contact the substantially planar surface and a middle section that is adapted to not contact the substantially planar surface.

20. The device of claim 19, wherein the middle section comprises a substantially spherical cavity.

21. The device of claim 17, wherein the heating block portion generates the heat.

22. The device of claim 21, wherein the heating block portion comprises a peripheral section and a middle section, and the peripheral section of the heating block portion generates more heat than the middle section of the heating block portion.
23. The device of claim 22, wherein current traveling through heating elements within the heating block portion generates the heat, and the peripheral section of the heating block portion comprises more heating elements per unit volume than the middle section of the heating block.